7900069

THE UNITED SUMES OF WITHING

TO ALL TO WHOM THESE PRESENTS SHAME COME:

D. I. van der Have B. V.

Wilherens, There has been presented to the

Seercizmy of Agrefoulture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, therefore, this certificate of plant variety protection is to grant unto the said applicant(s) and the successors, heirs or assigns of the said applicant(s) for the term of eighteen years from the date of this grant, subject to the payment of the required fees and periodic replenishment of viable basic seed of the variety in a public repository as provided by LAW, the right to extince others from selling the variety, or offering it for sale, or reproducing it, orting it, or exporting it, or using it in producing a hybrid or different and itherefrom, to the extent provided by the Plant Variety Protection Act.

NITED STATES SEED OF this variety (1) shall be sold by variety name only as certified seed and (2) shall conform to the number of generations the owner of the rights. (84 stat. 1542, as amended, 7 u.s.c. 2321 et seq.)

HARD FESCUE

'Silvana'

In Testimony Winercot, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington this 11th day of June in the year of our Lord one thousand nine

hundred and eighty-one.

Commissioner
Plant Variety Protection Office
Grain Division

Jeh R Black

UNITED STATES DEPARTME	NT OF AGRICULTURE		FORM APPROVED		
AGRICULTURAL MARKETING SERVICE LIVESTOCK, POULTRY, GRAIN & SEED DIVISION		No portificate	OMB NO. 40-R3822 No certificate for plant variety protection may		
APPLICATION FOR PLANT VARIED INSTRUCTIONS: See Reverse.		IFICATE be issued unli	ess a completed application form ved (5 U.S.C. 553).		
1a. TEMPORARY DESIGNATION OF	16. VARIETY NAME		FOR OFFICIAL USE ONLY		
HDu 32	Silvana	7900	7900069		
2. KIND NAME	3. GENUS AND SPECIES NAM	E FILING DATE	9 3:00 A.M.		
Hard fescue	Festuca longifol	ia FEE RECEIVE			
4. FAMILY NAME (BOTANICAL) Graminae	5. DATE OF DETERMINATION 1975	SAA A			
6. NAME OF APPLICANT(S) Koninklijk Kweekbedrijf en Zaadhandel D.J. van der Have B.V.	7. ADDRESS (Street and No. o Code) P.O. Box 1, 4420 AA Kapell	r R.F.D. No., City, State, and Le, Netherlands	ZIP 8. TELEPHONE AREA CODE AND NUMBER		
9. IF THE NAMED APPLICANT IS NOT A P		CORPORATED, GIVE STAT	E AND 11. DATE OF INCOR- PORATION		
ORGANIZATION: (Corporation, partners) Corporation	.,	Netherlands	8th March 1973		
12. NAME AND MAILING ADDRESS OF APP					
ALL PAPERS: Mr. Stan Rolli Seed Consultan P.O. Box 821, 13. CHECK BOX BELOW FOR EACH ATTAC	Beltsville, Md. 2	20705]			
X 13A. Exhibit A, Origin and Bre	eding History of the Variety (See Section 52 of the Plant	Variety Protection Act.)		
y 13B. Exhibit B, Novelty States	nent				
X 13C. Exhibit C, Objective Desc	and the second s	et form from Plant Variety	Protection Office.)		
X 130. Exhibit D, Additional De	and the second s	· · · · · · · · · · · · · · · · · · ·	33 ,		
14a. DOES THE APPLICANT(S) SPECIFY THA SEED? (See Section 83(a). (If "Yes," ansi	ver 14B and 14C below.) X	YES NO			
14b. DOES THE APPLICANT(S) SPECIFY THE LIMITED AS TO NUMBER OF GENERATION YES NO	FIONS?	"YES," TO 14B, HOW MANY ON BEYOND BREEDER SEED UNDATION 🔀 REGISTE			
15a. DID THE APPLICANT(S) FILE FOR PRO	TECTION OF THIS VARIETY IN	OTHER COUNTRIES?	TES NO (If "Yes," give		
name of countries and dates.) Netherlands 29-1-1975					
15b. HAVE RIGHTS BEEN GRANTED THIS V and dates.) Netherlands 10-4-1978	ARIETY IN OTHER COUNTRIE	S? X YES NO ()	f "Yes," give name of countries		
16. DOES THE APPLICANT(S) AGREE TO T	NO				
17. The applicant(s) declare(s) that a vial replenished upon request in accordant	ce with such regulations as ma	y be applicable.	-		
The undersigned applicant(s) is (are) variety is distinct, uniform, and stabl 42 of the Plant Variety Act.	e as required in Section 41, an	d is entitled to protection t	inder the provisions of Section		
Applicant(s) is (are) informed that fa	lse representation herein can j	eopardize protection and re	sult in penalties		
February 1979		D.J. Glas	11/00		
reditary 1777			OF APPLICANT)		

(SIGNATURE OF APPLICANT)

INSTRUCTIONS

GENERAL: Send an original copy of the application and exhibits, at least 2,500 viable seeds, and \$500 fee (\$250 filing fee and \$250 examination fee) to U.S. Dept. of Agriculture, Agricultural Marketing Service, Livestock, Poultry, Grain and Seed Division, Plant Variety Protection Office, National Agricultural Library Building, Beltsville, Maryland 20705. (See section 180.175 of the Regularions and Rules of Practice.) Retain one copy for your files. All items on the face of the form are self-explanatory unless noted below.

ITEM

Racil. 4/4/79 3100

- Give the date the applicant determined that he had a new variety based on (1) the definition in section 41(a) of the Act and (2) the date a decision was made to increase the seed.
- Give: (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method; (2) the details of subsequent stages of selection and multiplication; (3) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified and (4) evidence of uniformity and stability.
- Give a summary statement of the variety's novelty. Clearly state how this novel variety may be distinguished from all other varieties in the same crop. If the new variety most closely resembles one or a group of related varieties:

 (1) identify these varieties and state all differences objectively; (2) attach statistical data for characters expressed numerically and demonstrate that these differences are significant; and (3) submit, if helpful, seed and plant specimens or photographs of seed and plant comparisons clearly indicating novelty.
- 13c Fill in the Exhibit C, Objective Description form, for all characteristics for which you have adequate data.
- Describe any additional characteristics that are not described, or whose description cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the description of characteristics that are difficult to describe, such as, plant habit, plant color, disease resistance, etc.
- If "YES" is specified (seed of this variety be sold by variety name only as a class of certified seed) the applicant may NOT reverse his affirmative decision after the variety has either been sold and so labeled, his decision published, or the certificate has been issued. However, if the applicant specified "NO," he may change his choice. (See section 180.16 of the Regulations and Rules of Practice.)
 - See section 42 of the Plant Variety Protection Act and section 180.7 of the Regulations and Rules of Practice.

13A Exhibit A, Origin and Breeding History of the Variety.

Hard fescue plants were collected in the eastern part of the Netherlands during spring of 1965. About 6 plants per location were collected from 50 locations, amounting to 300 plants.

The plants were multiplied vegetatively and observed in clonal rows between 1966 and 1969. Clones with matching appearance were combined in isolation plots and Syn-1 seed was harvested in 1970.

From 1971 till 1973 the experimental varieties were observed in lawn trials on clay and sandy soil in the southwestern part of the Netherlands and in southern Germany.

The experimental variety HDu 32 proved to possess superior turf quality. Syn-2 seed of HDu 32 was harvested in 1973.

In 1973 a spaced plant trial and a new turf trial were established to compare Syn-1 and Syn-2 of HDu 32. No genetic shift in uniformity and turf quality was observed.

In 1975 it was decided to produce enough breeders' seed for the anticipated need over the next 15 years and to release the variety under the varietal name Silvana.

Re.: Application No. 7900069 Hard fescue "Silvana".

Exhibit A.

No variants were observed in 2 generations of reproduction and the variety was stable during 2 generations of reproduction.

Re.: Application No. 7900069 Hard fescue "Silvana". Exhibit B Novelty statement.

Silvana is most similar to Scaldis, except that Silvana grows more prostrate than Scaldis. This difference proved to be significant in 1975 and 1977 at the P = 0.01 level with a χ^2 - test, while in 1978 this significance was reached at P = 0.05. The χ^2 - test could not be applied in 1976 as more than 5% of the cells had a expected value smaller than 5.

Silvana grows more prostrate than Biljart. In 1976 and 1978 Silvana differed significantly from Biljart at the P = 0.01 level for this character with a χ ² - test. In 1977 this test could not be applied.

The panicle length of Silvana differs significantly from that of Biljart at the P = 0.01 level over the years 1976, 1977 and 1978 with a sign test.



(AMENDED)

Re: Application No. 7600069 Hard Fescue Silvana. Exhibit B: Novelty Statement.

Novelty of Silvana is based on the unique combination of the following characteristics:

Silvana is most similar to Scaldis exept that it has

- shown (1) a somewhat lighter green colour (2) an earlier maturity Supporting Ceta rec 3/17/8/00/
 - (3) a better turf quality as expressed by a better general appearance, a greater density and a finer texture in turf tests at Beltsville (Maryland), Kingston (Rhode Island), Parma (Idaho), Hubbard (Oregon) and Agassiz (British Columbia, Canada)
 - (4) a better performance under winter stress conditions at Agassiz (British Columbia, Canada) as expressed by winter greeness in march 1979
 - (5) a better performance under summer stress conditions at Beltsville (Maryland) as expressed by % plot green in july 1979
 - (6) a better resistance to Corticium fuciforme (red thread) and
 - (7) a better resistance to Helminthosporium sp (leaf spot)

The following data are indicative of novelty.

- Location: Beltsville (Maryland)

Person responsible: Dr. J.J. Murray,

Beltsville Agricultural Research Center,

Bld 001, Rm 333, Beltsville,

Maryland 20705.

Sown: september 1977 in 3 replications, 47 entries.

Results for 1978.

Turf quality (9 = best)

April June July August September October November Average Silvana 6.0 6.0 7.0 7.3 6.7 7.0 6.7 Scaldis 6.3 5.0 4.7 4.7 3.3 3.3 3.0 4.3

The two averages were significantly different at P = 0.05

 % Ground Cover november 1977 april 1978
 Helminthosporium (leaf spot) july 1978

 Silvana 85 99 7.0
 96 5.7

 Scaldis 83 96 (9 = resistant)
 5 - 7

The difference between Silvana and Scaldis for Helminthosporium resistance was significant (P = 0.05).

STAN ROLLIN SEED CONSULTANT 6802 OREM DRIVE LAUREL, MD. 20810 March 14, 1981

Dr. J. J. Higgins
Examiner
Plant Variety Protection Office
L, P, G & S Division, AMS, USDA,
National Agricultural Library Bldg.,
Fifth Floor
Beltsville, MD. 20705

Dear Dr. Higgins:

Subject: Hard Fescue Application No. 7900069, !Silvana!

In answer to your letter of January 29 on the above subject, my client has informed me that in 1980 a significant difference between the varieties Scaldis and Silvana existed for the 50% heading date in the official Dutch trials. The following information was submitted by the Government Inatitute for Variety Testing at Wageningen, the Netherlands:

50% Maturity Scaldis Silvana LSD(0.05LSD(0.01) (days after 1st April) 33 30 2.1 2.9

My client does not have data regarding the relative resistance to <u>Fusarium nivale</u> on 'Scaldis' and 'Silvana'; however, he is having artificial inoculation tests done in the U. S. and would like to have an extension of time in which to accomplish this. Since he has not indicated how much time will be required, I have written to him to determine this and immediately upon receiving this information I shall request an extension of time be granted by the Commissioner to complete these additional tests.

Sincerely yours,

cc van Wijk

STAN ROLLIN

U.S. DEPARTMENT OF AGRICULTURE AGRICULTURAL MARKETING SERVICE GRAIN DIVISION HYATTSVILLE, MARYLAND 20782 OBJECTIVE DESCRIPTION OF VARIETY FESCUE (Festuca spp.) Kweekbedrijf en Zaadhandel

D.J. van der Have B.V.	VARIETY NAME OR TEMPORARY DESIGNATION Silvana		
ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code)	FOR OFFICIAL USE ONLY		
P.O. Box 1, 4420 AA Kapelle,	PVPO NUMBER		
Netherlands.	7900069		
Place the appropriate number that describes the varietal character of this variety in the boxes below	v. Place a zero in first box (e.g. 0 8 9 or 0 9) wher		
number is either 99 or less or 9 or less. Characteristics described, including numerical measurement Ranges may be given also. Measured data should be for SPACED PLANTS. Royal Horticultural Science of the second state of the second state of the second se	is, should represent those that are typical for the variety.		
Ranges may be given also. Measured data should be for SPACED PLANTS. Royal Horticultural Somine plant colors; designate system used: RIVRO-system . Describe	location of test area Rilland and Wageninger		
All questions need not be answered, however, completeness should be striven for in order to establi	ish the most adequate Variety Identification. Nether Lan		
1. SPECIES: (With comparison varieties for use below - use varieties within species of application	on variety)		
6 2 = F. PRATENSIS (MEADOW) 21 = ENSIGN 22 = TRADER	44 = KENTUCKY 31		
3 = F. RUBRA SSP. COMMUTATA (CHEWINGS) 31 = CASCADE 32 = HIGHLIGHT 4 = F. RUBRA SSP. RUBRA (RED) 41 = BOREAL 42 = PENNLAWN 43 = DAWS			
5 = F. <u>OVINA</u> VAR. <u>OVINA</u> (SHEEP) 6 = <u>F. LONGIFOLIA</u> (HARD) 61 = DURAR 62 = BILJART (C-26) 63 = SCAL	DIS		
7 = OTHER (SPECIFY) F,	C.		
	·		
2. CYTOLOGY			
4 2 2n CHROMOSOME NUMBER			
3. ADAPTATION: (O = Not Tested; 1 = Not Adapted; 2 = Adapted)			
	South east		
2 NORTHEAST 2 SOUTHEAST 2 NORTH CENTRAL 2	PACIFIC N.W. 2 OTHER (SPECIFY) seeding		
4. MATURITY: (50% Headed) Give Test Area Wageningen (520 NL) Nethe	rlands		
0 2 DAYS EARLIER THAN 6 3			
MATURITY SAME AS	ARIETY		
majoriti oame as			
0 1 DAYS LATER THAN			
5. PLANT HEIGHT: (At maturity to top of panicle)			
7 0 0 mm HEIGHT			
2 0 mm shorter than			
2 V IMISTORIER TRAN			
COMPARISON V	ARIETY		
HEIGHT SAME AS			
5 0 mm TALLER THAN 6 2			
6. GROWTH HABIT (Mature)			
3 1 = ERECT (KENTUCKY 31) 2 = SEMI-ERECT (HIGHLIGHT) 3 = PROSTRA	ATE		
7. RHIZOMES			
- mm LENGTH - mm WIDTH			
0 0 = ABSENT 1 = WEAKLY CREEPING (DAWSON) 2 = STRONGLY CREEPING	G (BOREAL) 3 = OTHER		
8. LEAF BLADE:			
1 = LIGHT GREEN (GOLFROOD) 2 = MODERATELY LIGHT GREEN (H 4 COLOR: 4 = DARK GREEN (CASCADE) 5 = RI LIEGREEN 6 = GRAYGREEI	KENTUCKY 31		

FORM GR-470-37 (PAGE 2)
8. LEAF BLADE: 790069 1 = SMOOTH
0 ANTHOCYANIN: 0 = ABSENT 1 = PRESENT 1 HAIRS (BASAL): 0 = ABSENT 1 = PRESENT 2 MARGINS: 2 = SEMI-ROUGH
mm LENGTH (FIRST LEAF BELOW FLAG LEAF) mm WIDTH
mm SHORTER THAN mm NARROWER THAN
LENGTH SAME AS
mm LONGER THAN
9. LEAF SHEATH (Plant Base):
2 COLOR: 1 = WHITE (HIGHLIGHT) 2 = RED 1 AURICLE HAIRINESS: 0 = ABSENT 1 = PRESENT
10. PANICLE (Mature plant)
NUMBER OF PANICLES PER PLANT (FIRST YEAR OF PRODUCTION - FALL OR SPRING PLANTING SPECIFY
0 8 0 mm LENGTH GRAMS OF SEED PER PANICLE
1 0 mm SHORTER THAN 6 3
LENGTH SAME AS
1 0 mm LONGER THAN 6 2
SHAPE: 1 = NARROW-TAPERING 2 = EGG SHAPE 3 = OBLONG 4 = OTHER (SPECIFY)
TYPE: 1 = OPEN 2 = INTERMEDIATE 3 = COMPACT
2 HABIT: 1 = ERECT 2 = NODDING
2 BRANCHES: 1 = SMOOTH 2 = ROUGH
COLOR (At 50% flowering): 1 = YELLOWISH GREEN 2 = GREEN 3 = BLUISH GREEN 4 = PURPLISH 5 = REDDISH 6 = OTHER (SPECIFY)
11. PALEA:
1 HAIRS (ON KEELS): 0 = ABSENT 1 = SHORT (OLDS) 2 = LONG (RAINIER)
12. LEMMA:
1 HAIRS: 0 = ABSENT 1 = PRESENT
mm LEMMA LENGTH 9 3 mm LEMMA WIDTH
mm SHORTER THAN
LENGTH SAME AS COMPARISON WIDTH SAME AS COMPARISON VARIETY
0 3 mm LONGER THAN 6 3) 0 8 mm WIDER THAN 6 2
1 AWNS: 0 = ABSENT 1 = PRESENT
1 15 mm AWN LENGTH

FORM GR-470-37 (PAGE 3)			7900069				
12, LEMMA:		* ****					
mm SHORT	FER THAN						
LENGTH S	AME AS	COMPARI VARIETY		-			
	ER THAN						
13. SEED:			•				
5 8 1 mm LEN	IGTH		9 3 mm WIDTH				
mm SHC	DRTER THAN		0 6 mm. NARROWE	R THAN	6 3		
LENGTH		MPARISOI RIETY	N WIDTH SAME A	s , .	COMPARISO VARIETY	N'	
0 4 2 mm LON	NGER THAN 6 3		mm WIDER THA	N	<u>-</u>)		
0 9 8 0 GR	AMS PER 1000 SEED					. "	
GR/	AMS LESS THAN						
WEI		MPARISON RIETY	;				
	AMS MORE THAN . 6 3						
14. DISEASE, INSECT	, AND NEMATODE (O = Not Tested,	1 = Suscept	tible, 2 = Resistant):		•		
0 HELMINTHOSPOR	RIUM VAGANS 0 H.	SOROKINI	ANUM		H. DICTYOIDES		
0 RHIZOCTONIA SC	DLANI 2 ER	YSIPHE GI	RAMINIS	٥	USTILAGO STRIIFORMIS	<u> </u>	
1 FUSARIUM NIVA	LE 0 F.	ROSEUM	**************************************	0	TYPHULA IOTANA		
2 PUCCINIA GRAMI	INIS O P. S	STRIFOR	MIS	2	P. POAE-NEMORALIS		
2 P. CORONATA	0 <u>PY</u>	THIUM UL	TIMUM	2	CORTICIUM FUSCIFORM	E	
0 SCLEROTINIA HO	DMEOCARPA 0 INS	ECT		- 0	NEMATODE		
OTHER		HER		. 🗍	OTHER		
15. GIVE VARIETY O	R VARIETIES THAT MOST CLOSEL	Y RESEME	BLE THE APPLICATION VA	RIETY.	For the following characteris	tics	
	esemblance (D.R.) by placing in the colliery is less than comparison variety	lumn marki	ed, D.R., one of the following 2 = Same as	g numbers	:		
	er, greater, darker, more disease resista	nt, etc.	2				
CHARACTER	VARIETY	D,R,	CHARACTER		VARIETY	D. R.	
RHIZOME LENGTH	Scaldis	1 2	GROWTH HABIT	Bil:	jart	 	

Biljart <u>Biljart</u> LEAF WIDTH Scaldis PANICLE SHAPE Scaldis PANICLE COLOR Scaldis 2 Scaldis COLD INJURY WINTER COLOR Scaldis 2 Scaldis HEAT SHADE TOLERANCE Scaldis Scaldis DISEASE* DROUGHT

^{*}Specify each disease evaluated.

16. ADDITIONAL DESCRIPTION: (Use additional sheets as required)

7900069

Describe all characteristics that cannot be adequately described in the form above. Comparative varieties should be used as may be appropriate, such as for disease. Append all comparative trial and evaluation data, including measured characters, environmental, and disease tests.

1976 1977 1978 Mean	5. Plant height in cm	l			
Scaldis 71 79 65 72 Silvana 69 79 61 70 LSD 1% 6.10 4.81 4.13 LSD 5% 4.49 3.56 3.07 10. Panicle length in cm 8 9 9 Biljart 7 7 8 7 Scaldis 8 9 9 9 Silvana 8 8 9 8 LSD 1% 1.22 1.08 0.69 LSD 5% 0.89 0.80 0.51 Flag leaf length in cm Biljart 5.6 6.6 4.3 5.5 Scaldis 6.2 7.5 4.5 6.1 Silvana 6.2 6.9 4.5 5.9			1977	1978	Mean
Silvana 69 79 61 70 LSD 1% 6.10 4.81 4.13 LSD 5% 4.49 3.56 3.07 10. Panicle length in cm Biljart 7 7 8 7 Scaldis 8 9 9 9 Silvana 8 8 9 9 LSD 1% 1.22 1.08 0.69 LSD 5% 0.89 0.80 0.51 Flag leaf length in cm Biljart 5.6 6.6 4.3 5.5 Scaldis 6.2 7.5 4.5 6.1 Silvana 6.2 6.9 4.5 5.9 LSD 1% 1.29 1.06 0.74	Biljart	65	74	56	65
LSD 1% 6.10 4.81 4.13 LSD 5% 4.49 3.56 3.07 10. Panicle length in cm Biljart 7 7 8 7 Scaldis 8 9 9 9 Silvana 8 8 9 8 LSD 1% 1.22 1.08 0.69 LSD 5% 0.89 0.80 0.51 Flag leaf length in cm Biljart 5.6 6.6 4.3 5.5 Scaldis 6.2 7.5 4.5 6.1 Silvana 6.2 6.9 4.5 5.9 LSD 1% 1.29 1.06 0.74	Scaldis	71	79	65	72
LSD 5% 4.49 3.56 3.07 10. Panicle length in cm Biljart 7 7 8 7 Scaldis 8 9 9 9 Silvana 8 8 9 8 LSD 1% 1.22 1.08 0.69 LSD 5% 0.89 0.80 0.51 Flag leaf length in cm Biljart 5.6 6.6 4.3 5.5 Scaldis 6.2 7.5 4.5 6.1 Silvana 6.2 6.9 4.5 5.9 LSD 1% 1.29 1.06 0.74	Silvana	69	79	61	70
LSD 5% 4.49 3.56 3.07 10. Panicle length in cm Biljart 7 7 8 7 Scaldis 8 9 9 9 Silvana 8 8 9 8 LSD 1% 1.22 1.08 0.69 LSD 5% 0.89 0.80 0.51 Flag leaf length in cm Biljart 5.6 6.6 4.3 5.5 Scaldis 6.2 7.5 4.5 6.1 Silvana 6.2 6.9 4.5 5.9 LSD 1% 1.29 1.06 0.74					
10. Panicle length in cm Biljart 7 7 8 7 Scaldis 8 9 9 9 Silvana 8 8 9 8 LSD 1% 1.22 1.08 0.69 LSD 5% 0.89 0.80 0.51 Flag leaf length in cm Biljart 5.6 6.6 4.3 5.5 Scaldis 6.2 7.5 4.5 6.1 Silvana 6.2 6.9 4.5 5.9 LSD 1% 1.29 1.06 0.74	LSD 1%	6.10	4.81	4.13	
Biljart 7 7 8 7 Scaldis 8 9 9 9 Silvana 8 8 9 8 LSD 1% 1.22 1.08 0.69 LSD 5% 0.89 0.80 0.51 Flag leaf length in cm Biljart 5.6 6.6 4.3 5.5 Scaldis 6.2 7.5 4.5 6.1 Silvana 6.2 6.9 4.5 5.9 LSD 1% 1.29 1.06 0.74	LSD 5%	4.49	3.56	3.07	
Biljart 7 7 8 7 Scaldis 8 9 9 9 Silvana 8 8 9 8 LSD 1% 1.22 1.08 0.69 LSD 5% 0.89 0.80 0.51 Flag leaf length in cm Biljart 5.6 6.6 4.3 5.5 Scaldis 6.2 7.5 4.5 6.1 Silvana 6.2 6.9 4.5 5.9 LSD 1% 1.29 1.06 0.74					
Scaldis 8 9 9 9 Silvana 8 8 9 8 LSD 1% 1.22 1.08 0.69 LSD 5% 0.89 0.80 0.51 Flag leaf length in cm Biljart 5.6 6.6 4.3 5.5 Scaldis 6.2 7.5 4.5 6.1 Silvana 6.2 6.9 4.5 5.9 LSD 1% 1.29 1.06 0.74	10. Panicle length in	cm			
Silvana 8 8 9 8 LSD 1% 1.22 1.08 0.69 LSD 5% 0.89 0.80 0.51 Flag leaf length in cm Biljart 5.6 6.6 4.3 5.5 Scaldis 6.2 7.5 4.5 6.1 Silvana 6.2 6.9 4.5 5.9 LSD 1% 1.29 1.06 0.74	Biljart	7	7	8	7
LSD 1% 1.22 1.08 0.69 LSD 5% 0.89 0.80 0.51 Flag leaf length in cm Biljart 5.6 6.6 4.3 5.5 Scaldis 6.2 7.5 4.5 6.1 Silvana 6.2 6.9 4.5 5.9 LSD 1% 1.29 1.06 0.74	Scaldis	8	9 ,	9	9
LSD 5% 0.89 0.80 0.51 Flag leaf length in cm Biljart 5.6 6.6 4.3 5.5 Scaldis 6.2 7.5 4.5 6.1 Silvana 6.2 6.9 4.5 5.9 LSD 1% 1.29 1.06 0.74	Silvana	8	8	9	8
LSD 5% 0.89 0.80 0.51 Flag leaf length in cm Biljart 5.6 6.6 4.3 5.5 Scaldis 6.2 7.5 4.5 6.1 Silvana 6.2 6.9 4.5 5.9 LSD 1% 1.29 1.06 0.74	LSD 1%	1.22	1.08	0.69	
Flag leaf length in cm Biljart 5.6 6.6 4.3 5.5 Scaldis 6.2 7.5 4.5 6.1 Silvana 6.2 6.9 4.5 5.9 LSD 1% 1.29 1.06 0.74	LSD 5%	0.89			
Biljart 5.6 6.6 4.3 5.5 Scaldis 6.2 7.5 4.5 6.1 Silvana 6.2 6.9 4.5 5.9 LSD 1% 1.29 1.06 0.74		•			
Scaldis 6.2 7.5 4.5 6.1 Silvana 6.2 6.9 4.5 5.9 LSD 1% 1.29 1.06 0.74	Flag leaf length in cr	n			
Scaldis 6.2 7.5 4.5 6.1 Silvana 6.2 6.9 4.5 5.9 LSD 1% 1.29 1.06 0.74	Biljart	5.6	6.6	4.3	5.5
LSD 1% 1.29 1.06 0.74	Scaldis	6.2	7.5	1000	6.1
	Silvana	6.2	6.9	4.5	
	LSD 17	1 20	1 06	0.74	
		•			